

REMARKS

In the June 8, 2005 Office Action, claims 1, 2, 12-17 and 27-32 stand rejected in view of prior art, while claims 3-11 were indicated as containing allowable subject matter and claims 18-26 were indicated as allowed. Claims 33-47 were withdrawn from consideration. No other objections or rejections were made in the Office Action. Applicants wish to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application.

Status of Claims and Amendments

In response to the June 8, 2005 Office Action, Applicants have amended claims 27-32, and added new claims 48-65, as indicated above. Thus, claims 1-65 are now pending, with claims 1, 18, 33 and 48 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Interview Welcomed

The undersigned attempted to contact Examiner Peavey in June 2005 to conduct an Interview in order to discuss this application. However, Examiner Peavey was on extended leave. So as not to burden Examiner Peavey with an Interview, Applicants have proceeded with this Amendment without conducting an Interview. However, Applicants welcome Examiner Peavey to contact the undersigned to conduct an Interview if Examiner Peavey believes an Interview could speed prosecution of this application, especially if Examiner Peavey finds the arguments below unpersuasive and intends to issue a final rejection.

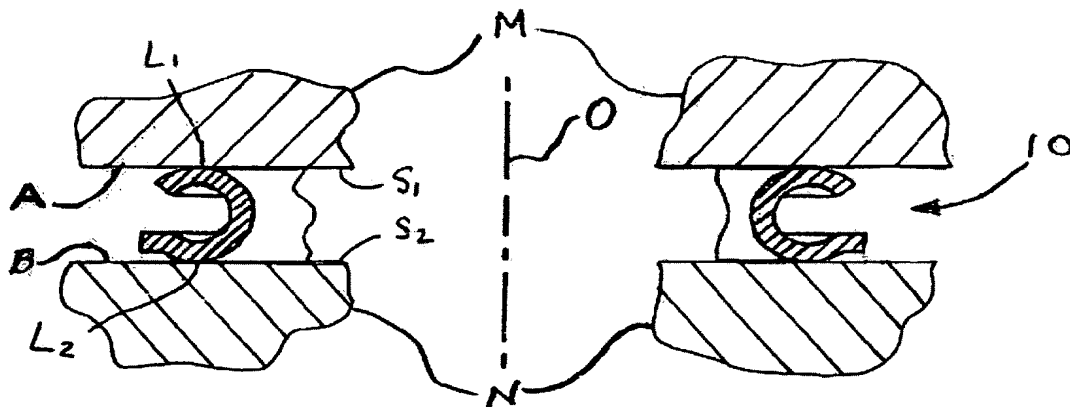
Election of Species

Applicants elected Group I (claims 1-32) drawn to a metallic seal, ***without*** traverse, for examination on the merits in the March 24, 2005 Response. Thus, claims 33-47, believed to be directed to the non-elected Group II, drawn to a method of manufacturing have been withdrawn from consideration in this case. However, Applicants respectfully request that these non-elected claims 33-47 be rejoined in this application and allowed. In particular, claims 33-47 require all of the limitations of independent claim 1, which is believed to be allowable, as explained below.

Rejections - 35 U.S.C. § 102

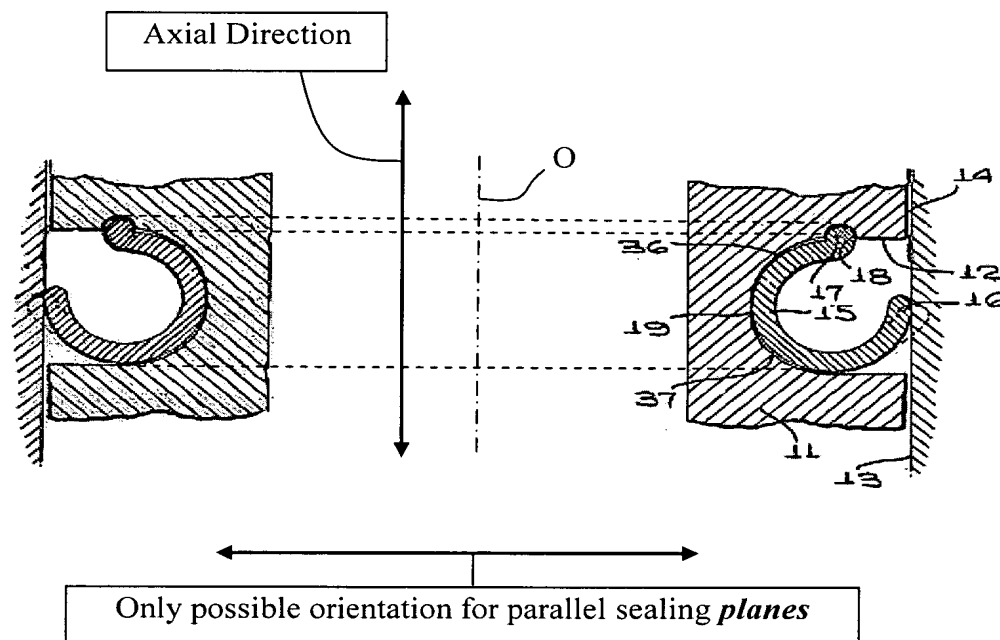
In paragraph I. (pages 2-3) of the Office Action, claims 1, 2, 12, 13, 17, 27, 28, 31 and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,867,482 to Schmidt (hereinafter "the Schmidt patent"). In response, Applicants respectfully traverse this rejection. Applicants believe that this rejection with respect to claims 27, 28, 31 and 32 is now moot in view of the amendments to these claims. These claims now depend from independent claim 18, indicated as being allowable.

With respect to the rejection of claims 1, 2, 12, 13 and 17, independent claim 1 requires a first annular leg portion extending from the first end of the central portion to an annular first free end, the first annular leg portion having *a first annular convex sealing surface lying in a first sealing plane*; and a second annular leg portion extending from the second end of the central portion to a second free end, the second annular leg portion having *a second annular convex sealing surface lying in a second sealing plane*, the second free end of the second leg portion having an annular flange extending substantially parallel to the first and second sealing planes and offset from the second sealing plane in an axial direction towards the first sealing plane. The first sealing plane is represented as A, while the second sealing plane is represented by B. See Figure below.



Contrary to the assertions of the Office Action, this structure is *not* disclosed or suggested by the Schmidt patent or any other prior art of record. Rather, in the Schmidt patent, the ring is configured with sealing surfaces that lie on imaginary sealing cylinders or imaginary sealing cones, without first and second *substantially parallel sealing planes*, and

without *an annular flange extending substantially parallel to the first and second sealing planes and offset from the second sealing plane in an axial direction towards the first sealing plane*. The Schmidt patent is designed as a radial seal for a piston with an annular groove 12. The piston ring resiliently engages the cylinder wall at 16. By definition, a cylinder wall is cylindrical in shape to form an axially extending sealing cylinder (or line) generally found adjacent reference numerals 14 and 16. The remainder of the piston ring has a mating tubular shape with the groove 12. In other words, the Schmidt patent lacks substantially parallel sealing *planes* whatsoever. Moreover, the so-called annular flange 17 extends in an axial direction *perpendicular* to any hypothetical parallel planes. In any case, the Schmidt patent fails to disclose the unique arrangement of independent claim 1. See the Figure below, which illustrates the orientation of the cross-sectional profile of Figure 1 of the Schmidt patent relative to an axial center line O.



It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose each and every element of the claim within the reference. Therefore, Applicants respectfully submit that claim 1 is not anticipated by the Schmidt patent or any of the other prior art of record. Accordingly, withdrawal of this rejection of independent claim 1 is respectfully requested.

Moreover, Applicants believe that dependent claims 2, 12, 13 and 17 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Also, dependent claims 2, 12, 13 and 17 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claim 1, neither does the prior art anticipate these dependent claims. Accordingly, withdrawal of this rejection of these dependent claims is also respectfully requested.

Rejections - 35 U.S.C. § 103

In paragraph II. (page 3) of the Office Action, claims 14, 15, 29 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Schmidt patent. In response, Applicants respectfully traverse this rejection. Applicants believe that this rejection with respect to claims 29 and 30 is now moot in view of the amendments to these claims. These claims now depend from independent claim 18, indicated as being allowable.

More specifically, independent claim 1 requires a pair of convex sealing surfaces lying in substantially parallel sealing planes with an annular flange extending substantially parallel to the sealing planes, as explained above. Clearly this arrangement is *not* disclosed or suggested by the Schmidt patent or any other prior art of record. Specifically, in the Schmidt patent the so-called annular flange 17 extends in an axial direction *perpendicular* to any hypothetical parallel *planes* and/or lacks substantially parallel sealing planes whatsoever, as explained above. Thus, even if the shape of the piston ring of the Schmidt patent were modified as suggested in the Office Action (i.e. to have a non-circular or substantially rectangular shape with rounded corners as viewed along said central axis), the Schmidt patent still lacks the unique arrangement required by independent claim 1. Moreover, there is no suggestion or motivation to modify the piston ring of the Schmidt patent to result in the unique arrangement of independent claim 1.

It is well settled in U.S. patent law that the mere fact that the prior art can be modified does *not* make the modification obvious, unless the prior art *suggests* the desirability of the modification. Accordingly, the prior art of record lacks any suggestion or expectation of success for modifying the Schmidt patent to create the Applicants' unique arrangement of a pair of convex sealing surfaces lying in substantially parallel sealing planes with an annular flange extending substantially parallel to the sealing planes, as explained above.

As explained above, the prior art of record fails to disclose or suggest the unique arrangement of independent claim 1. Accordingly, Applicants believe that the dependent 14 and 15 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Also, dependent claims 14 and 15 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not disclose or suggest the invention as set forth in independent claim 1, the prior art of record also fails to disclose or suggest the inventions as set forth in these dependent claims. Therefore, Applicants respectfully request that this rejection be withdrawn in view of the above comments and amendments.

Allowable Subject Matter

In paragraph III. (page3) of the Office Action, claims 18-26 were indicated as allowed and claims 3-11 were indicated as containing allowable subject matter. Applicants wish to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application. In response, Applicants have amended claims 27-32 to depend from allowed claim 18. Thus, Applicant believes that claims 18-32 are now allowable. However, claims 3-11 have not been amended to place them in independent form. Specifically, Applicants believe independent claim 1, from which claims 3-11 depend, is allowable over the prior art of record, as explained above. Accordingly, Applicant believes claims 1-17 are allowable.

New Claims

Applicant(s) have added new claims 48-65 by the current Amendment. Applicants believe that new claims 48-64 read on elected Group I (i.e. claims 1-32) drawn to a metallic seal. Accordingly, examination and consideration of claims 48-64 are respectfully requested. Claim 65 is directed to non-elected group II (i.e. claims 33-47). Thus, claim 65 can be withdrawn from consideration. However, claim 65 depends from non-elected claims 33-47, believed to be allowable, as explained above. Thus, claim 65 is believed to be allowable because it depends from non-elected claim 33, which includes all of the limitations of claim 1, as mentioned above.

New claims 48-64 are identical to claims 1-17, respectively, except that new claims 48-64 require an additional limitation of the seal having a substantially uniform thickness with said annular flange projecting radially beyond said first free end by a distance no larger than said thickness. Applicants believe that new claims 48-64 are allowable for the reasons discussed above with respect to claim 1, and additionally because the new limitation of claims 48-64 is not disclosed or suggested in the prior art.

* * *

In view of the foregoing amendment and comments, Applicants respectfully assert that claims 1-65 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. If there are any questions regarding this Amendment, please feel free to contact the undersigned.

Respectfully submitted,



Patrick A. Hilsmier
Reg. No. 46, 034

SHINJYU GLOBAL IP COUNSELORS, LLP
1233 Twentieth Street, NW, Suite 700
Washington, DC 20036
(202)-293-0444
Dated: September 28, 2005

G:\09-SEP05-MS\PK-US035069 Amendment.doc